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Non-condom related strategies to reduce the risk of HIV transmission: perspectives and experiences of gay men with diagnosed HIV

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Abstract

Gay men with diagnosed HIV can adopt a number of strategies to reduce the risk of transmitting HIV to others, although research has typically focussed on condom use. Interviews with 42 HIV positive gay men who reported recent engagement in anal intercourse without condoms explored their awareness of sexual risk and their perceptions of non-condom related strategies to reduce it. In articulating men's ambivalence for strategies that can only reduce the risk of transmission, rather than eliminating, the findings have implications for the consideration and integration of new biomedical interventions to reduce the likelihood of HIV transmission.

Keywords

HIV, risk reduction, treatment as prevention, withdrawal, serosorting

Introduction

This paper explores the behavioural strategies that men who have sex with men (MSM) who have diagnosed HIV use to reduce the likelihood of transmitting HIV to sexual partners. It focuses on strategies which augment or replace condom use. We describe men's perceptions of such strategies and the extent of their use. While much of the literature relating to HIV among this at-risk population uses the behavioural category 'MSM', the men interviewed in this study all identified as 'gay' and, therefore, we use the terms interchangeably throughout this paper.

Sex between men remains the most common way that HIV is transmitted in the UK (Aghaizu, Brown, Nardone, Gill, & Delpech, 2013). Recent comprehensive mathematical modelling suggests HIV incidence among MSM in the UK rose and fell sharply in the early 1980s. It has since persistently and gradually increased and is now at the same level as its peak in the early 1980s (Phillips *et al.*, 2013). The number of MSM with diagnosed HIV currently stands at more than 33,600 (Aghaizu *et al.*, 2013) with a disproportionately high burden of infection among black and minority ethnic MSM (Dogan et al., 2005). The desire to have sex does not, of course, cease at diagnosis and many MSM with diagnosed HIV continue to have active sexual lives, although these are often compromised by the effects of HIV stigma and rejection by sexual partners (Bourne, Hickson, Keogh *et al.*, 2012). Research has also shown that MSM with diagnosed HIV take the potential for onward transmission seriously and most feel a responsibility to try and ensure that onward transmission does not occur (Stephenson *et al.*, 2003).

However, findings from ongoing periodic community surveys in the UK indicate that MSM with diagnosed HIV often engage in condomless anal intercourse (Hickson, Bonell, Hargreaves, Reid, & Weatherburn, 2013). Previous research in the UK found that around a third of MSM with diagnosed HIV said that they had possibly or definitely participated in sero-discordant condomless anal intercourse in the previous year (Hickson, Weatherburn, Reid, & Stephens, 2003). Similar sexual risk

behaviour has also been documented among MSM with diagnosed HIV in the United States (Crepaz et al., 2009) and Australia (Rawstorne et al., 2007). Sero-discordant or sero-unknown condomless anal intercourse may occur for a variety of reasons, which are contingent upon a number of situational factors. Numerous studies have demonstrated the symbolic nature of condomless sex and have made clear the value that many MSM, regardless of HIV status, place on being able to have anal intercourse with their partners without condoms (Flowers, Smith, Sheeran, & Beail, 1997; Schilder et al., 2008). Some see the cessation of condom use as a milestone in romantic or long-standing relationships and sex without condoms enables a greater sense of intimacy that extends beyond skin-to-skin contact to incorporate an enhanced self-comfort and comfort with one's partner (Starks, Payton, Golub, Weinberger & Parsons, 2013).

Previous research has identified and named a number of risk reduction strategies beyond condom use that MSM with diagnosed HIV are known to utilise to reduce the likelihood of transmitting HIV. These strategies differ in terms of their efficacy but all are thought to reduce the likelihood of HIV transmission. 'Serosorting' (Suarez et al., 2001) refers to a practice of MSM with diagnosed HIV seeking to have condomless anal intercourse only with men who also have diagnosed HIV. 'Strategic positioning' (Van de Ven et al., 2002) is a term often used by researchers to describe how some men attend to the modality of anal intercourse based on the HIV status of each partner, where the infected partner might assume the receptive role in to reduce the risk of transmission (Attia, Egger, Muller, Zwahlen, & Low, 2009). Finally, a study of factors associated with HIV seroconversion among gay men in England (Macdonald et al., 2008) found that men who engaged in receptive condomless anal intercourse to ejaculation were 2.5 times more likely to acquire HIV than men who did this but not to ejaculation. This provides evidence to support a risk reduction strategy of withdrawal prior to ejaculation that some men with diagnosed HIV utilise if engaging in insertive anal intercourse with an uninfected partner (Parsons et al., 2005). These strategies do not exist in isolation, but are dependent on individual or relational context, sexual preferences or risk priorities and are subject to negotiation

with partners. None are mutually exclusive and it is unlikely that men make the same choice for all their sexual encounters. Like condom use, none of these strategies are 100% effective in preventing HIV transmission.

In addition to these risk reduction strategies, there is growing consensus on the efficacy of biomedical technologies. In early 2008 the 'Swiss Statement' put forward by the Swiss Federal Commission on HIV/AIDS stated that individuals with diagnosed HIV who are on effective anti-retroviral treatment (ART) who have an undetectable viral load may not pose a risk of infection to others during vaginal intercourse (Vernazza, Hirschel, Bernasconi, & Flepp, 2008). A recent clinical trial, which included MSM, found that viral load suppression may limit the likelihood of transmission to at most 4%, and may in fact be zero (Rodger et al., 2014). This growing, largely coherent, body of evidence has led numerous academics, politicians, advocates and public health professionals to frame '*Treatment as Prevention*' as a significant development in the global HIV epidemic (Cohen et al., 2011; World Health Organisation, 2012). Knowledge of the 'Swiss Statement' and the notion of 'Treatment as Prevention' has filtered through academic, activist and voluntary sector channels to people with diagnosed HIV and their sexual partners. It follows, therefore, that some MSM with diagnosed HIV may take account of their viral load and infectiousness if they are considering which risk management strategy they use. In addition to these strategies that can be more clearly directed by men with diagnosed HIV, there is also emerging consensus as to the effectiveness of pre-exposure prophylaxis (PrEP), a course of anti-retroviral therapy that can be used by HIV negative men to prevent seroconversion (Grant et al., 2010) and may well become a feature of sexual risk negotiation in the near future.

While the use of condoms by HIV positive men during anal intercourse has been examined in depth by numerous researchers across several continents, management of HIV transmission risk by other means has received less attention. Where it has occurred, most research has focussed on identifying the prevalence of behavioural strategies such as withdrawal, or strategic positioning (Khosropour et

al., 2014; McFarland et al., 2012). What is lacking, however, is a more detailed exploration of the meanings that MSM with diagnosed HIV ascribe to methods of reducing transmission risk that do not include condoms. The growing scientific consensus that effective treatments might reduce the likelihood of HIV transmission during sex also means that a closer interrogation of how people with diagnosed HIV perceive and/or use strategies is warranted. The present study utilises qualitative methods to explore the strategies of HIV transmission risk management that do not involve condoms, among MSM with diagnosed HIV.

The 'Swiss statement' (Vernazza et al., 2008) had been released 5 months prior to data collection for this project. Its release was followed by significant media coverage within both the mainstream and gay press in England and Wales, with further dissemination undertaken by many HIV charities. This paper offers a snapshot of men's perception of their non-condom related risk-reduction strategies, including the notion of viral load and infectiousness, at that particular point in time.

Methods

Forty-two participants were recruited with the assistance of community-based HIV and sexual health agencies in England and Wales. The authors prepared A5 information sheets and posters for the agencies, who then distributed them to their members via their email lists, or face-to-face when members visited their centres to receive services. The eligibility criteria comprised being a gay, bisexual or other man who has sex with men, who has diagnosed HIV and who had engaged in at least one instance of condomless anal intercourse in the previous 12 months. Men who had only had anal intercourse with condoms were excluded from taking part. These criteria were described on the promotional materials and those who met them were asked to contact the lead author via phone or email for screening. Potential participants were asked their age and length of time since diagnosis so that a diverse sample could be achieved. Additionally, purposive sampling balanced the sample between areas of higher HIV prevalence (London and Manchester) and lower HIV prevalence

(Liverpool, Swansea, Stoke on Trent, Leeds, Exeter and Bristol). Participants were paid £20 cash to cover expenses.

The semi-structured interviews lasted 1-2 hours, and took place at the offices of the principal author, at a collaborating HIV service organisation, or the participant's home. Each interview was digitally recorded and transcribed verbatim. The interview included questions about the influence of their own and sexual partners' HIV status on sexual risk assessment as well as questions relating to their most recent experience of condomless anal intercourse. Men were asked specific questions about their understanding, perceptions and experience of withdrawal prior to ejaculation, modality of anal intercourse and if or how they attend to their HIV viral load and infectiousness when having sex with negative or status unknown partners. As PrEP was only in the early phases of development at the time these interviews were conducted, questions about relating to PrEP were not included.

The data were collated and subjected to a thematic analysis (Braun & Clarke, 2006). The data was read and re-read and initial codes (relevant or significant features) were documented. These were then organised into relevant themes and all examples of each potential theme were recorded. Identification of key themes was undertaken by the first author and then corroborated by the second and third authors. Ethical approval for the study was granted by the Faculty of Humanities and Social Sciences Research Ethics Committee at the University of Portsmouth. Quotes from participants (*in italics*) are followed by their age and length of time with diagnosed HIV.

Results

Key sample demographic details can be seen in Table I below. We achieved a relative broad diversity of men who had been living with diagnosed for a shorter or longer time (range <1 to 23 years) and 9 of the 42 men were of non-white British ethnicity.

[Insert Table I Here]

All of the men we interviewed emphasised their absolute desire not to transmit HIV. All recognised the risk of transmission during anal intercourse, and felt that when having anal intercourse, the most effective means of preventing transmission was to use condoms. Participants' reasons for having condomless anal intercourse, were diverse and often complex. Some men sought out and had condomless anal intercourse regularly with men they knew or thought to be seroconcordant. Others had only engaged in condomless anal intercourse on a handful of occasions, sometimes with men they knew to be HIV positive, but occasionally with men of whose HIV status they were unsure. Around a quarter of men always sought to use condoms when having anal intercourse but found that they could not do so for a variety of reasons (such as being under the influence of drugs or alcohol, or feeling disempowered in relation to their sexual partner). These motivations or rationales for condomless anal intercourse are not the focus of this paper but are discussed in more detail elsewhere (Bourne et al., 2009). Here we present two overarching themes that capture men's perspectives and experience relating risk reduction strategies that do not incorporate condoms.

Risk reduction Vs risk elimination

Whether it was with regard to withdrawal before ejaculation, being the insertive or receptive partner, or considering viral load, some men were uncomfortable with simply reducing the risk of HIV transmission during anal intercourse with a sero-discordant or sero-unknown partner. While condom use with such men was largely constructed as highly effective in terms of its ability to eliminate the risk of transmission, the majority described other risk reduction strategies as being ineffective or uncertain. In relation to the notion of risk management by being the receptive partner during anal intercourse, one participant said:

“You probably are the risk but not as much as you could do [by being the receptive partner]. It’s not reducing the risk far enough. It’s like playing Russian Roulette but having one bullet instead of three.” [Early 40s, diagnosed 2 years]

Similarly, when discussing withdrawal prior to ejaculation more than half of men described how pre-ejaculatory fluid might also contain HIV, and how it can be difficult to time withdrawal accurately.

The notion that variations in viral load would influence their infectiousness made some sense to many participants. However the idea that they might *plan* to have condomless anal intercourse with an HIV-uninfected partner on the basis of having a low or undetectable viral load was firmly rejected by nearly all. Men again felt that this represented risk reduction when what they sought was greater certainty and a sense that they could eliminate the chance of transmitting HIV.

Doubts relating to the link between viral load and infectiousness were commonly based on what men perceived as scientific uncertainty or fallibility. A few men voiced specific concerns about the notion of viral load being ‘undetectable’ and felt this may represent a failure of scientific methods to detect the virus, rather than it being at such low levels it could not be detected (as is the intended meaning of the term).

“I mean I have, it may have crossed my mind once or twice that if I had an undetectable viral load then I [...] there might be a chance of me not being able to pass it on, but then undetectable doesn’t mean that it’s not there. It just means that whatever method there is can’t pick it up.” [Late 20s, diagnosed 3 years]

Other men raised concerns about the potential for the virus to stay ‘hidden’ from scientific tests and therefore the possibility remained for them to still be infectious. The very fact that HIV is a virus led

several men to draw on their lay understanding of how viruses replicate and mutate to highlight what they felt were weaknesses in the 'Swiss statement' (or the general concept it conveys).

"I don't think anyone can give you a black and white answer, not even the scientists because, you know, it's a virus isn't it? And by its own nature it will evolve and develop." [Mid 30s, diagnosed <1 year]

In addition to perceived scientific weaknesses of viral load and infectiousness as a risk management technique, a majority of participants struggled to overcome a strongly held belief that having sex without condoms was simply not the morally 'right' thing to do. In a clear demonstration of socially constructed behavioural expectations, one man suggested that risk reduction strategies such as those described above "muddy the water" of how one should be behaving (i.e. using condoms).

"I don't think it's helpful to have a concept of that really. I'm a bit all or nothing. I understand that that's true [the 'Swiss statement'] and that the research says that, but I think that's a psychological trick to make people feel better about having unprotected sex [...] But it just seems to me as a bit of a trick and a work around not having to face the issue that if you have unprotected sex with someone you're a risk." [Mid 20s, diagnosed 3 years]

For reasons of perceived ineffectiveness, scientific fallibility and socially 'correct' behaviour, most participants were reluctant to actively plan to manage the risk of HIV transmission to an uninfected partner in ways that did not rely on condoms.

Intentional Vs post-hoc rationalisations of risk

While most men expressed discomfort with strategies that reduced rather than eliminated HIV transmission risks, many also described how they might make decisions about risk management

dependent upon the specific sexual partner. Their use of non-condom related risk reduction strategies often depended upon a range of emotional and contextual factors: feelings or desires around the time sex occurred; familiarity with their sexual partner; the physical spaces within which they met their sexual partners; and the sexual roles they felt comfortable adopting with that partner in that setting. Such use was intentional but within strictly defined circumstances. Conversely, there were men who sought to utilise their awareness of non-condom related risk reduction strategies to make sense of risks that they had *already* taken.

Selecting sexual partners based on their HIV status (serosorting) in order to have condomless anal intercourse without HIV transmission was reported by around half of participants. Some men expressed a sense of freedom when having sex with other men with diagnosed HIV and took comfort in the sense of certainty that they could not be the cause of primary HIV infection. However, among all those men who reported condomless anal intercourse with partners they believed to be HIV positive, only a small proportion explicitly established the HIV sero-concordancy of their sexual partnership every time. More commonly, participants described a range of situations or contexts where they disclosed their own HIV status in ways which, objectively, could be considered implicit.

There is a nineteen year-old not too far away who keeps texting me for sex, and what I've basically done with him is I've said 'Look I have bareback sex. I have bareback sex with other HIV positive men. You are at risk if you have sex with me', without saying I am HIV positive.
[Mid 30s, diagnosed 6 years]

When seeking or having sex with men in certain physical settings (such as gay saunas or other sex-on-premises venues) it was often assumed that any man willing to have condomless anal intercourse must also be HIV positive, mitigating the need for disclosure of one's status. This was particularly the case in high HIV prevalence areas. Such implicit status disclosure, or assumptions of other men's

status, was a key means through which men managed their fear of rejection by potential partners, but may also reflect men's desire for condomless sex (for reasons of enhanced intimacy or physical sensation), consciously or otherwise.

There were other participants who were uncomfortable with the idea of deliberately seeking sex with other men who have diagnosed HIV and thus rejected sero-sorting as a means of managing HIV transmission risk. Some did not want to limit their pool of sexual or intimate partners to just those with diagnosed HIV, while others appeared to express a fear of negative association with men who they felt engaged in more extreme sex.

*But if you ever went into Gaydar and you went, and you did a sort of positive ... putting HIV positive as a search ... you tend to come up with sort of a certain type of gay man who is giving the impression of being very promiscuous and being into just about you know, everything [...]
No, it doesn't appeal to me. [Mid 50s, diagnosed 14 years]*

The notion of assuming a receptive role during anal intercourse, or withdrawing prior to ejaculation, as a means of reducing the likelihood of transmission was dismissed by the majority of participants. Only five men actively withdrew before ejaculation when being the insertive partner in condomless anal intercourse with a sero-discordant partner, or they ensured they were the receptive partner, as an intentional means of reducing the risk of HIV transmission. In nearly all such cases men were in longer-term relationships where the relative risks had been very carefully considered by both parties. Most often, participants felt that the sexual roles during anal intercourse were more likely to be determined by sexual preference or pleasure than by concerns relating to HIV transmission.

Around two-thirds of participants were already familiar with the notion of HIV anti-retroviral treatment having some impact on infectiousness – either from their health care provider, peers, or

the HIV and gay press – and some were aware of the ‘Swiss statement’. However, only a very small proportion actively considered their own viral load and associated infectiousness when deciding whether or not to engage in condomless anal intercourse with an HIV uninfected partner. Active consideration of viral load and infectiousness prior to condomless anal intercourse was only reported by men in longer-term or romantic sero-discordant relationships where the risks of transmission had been carefully considered. In these few cases, a desire for intimacy was given as a rationale for engaging in condomless anal intercourse.

I think I would have to have a really serious long discussion with him [my boyfriend] and it [sex without condoms] wouldn't be something that I would do straight away. Just because I kind of think... it will always be one of those things you can never go back from [...] But being undetectable does at least make it a possibility [Mid 30s, diagnosed 15 years]

Only men who had been diagnosed with HIV for more than six years held this view of HIV treatment and suppressed viral load as an acceptable and intentional prevention option. This appeared to reflect their greater understanding of HIV treatments and prognosis, and greater experience of negotiating within sero-discordant relationships.

In summary, intentional utilisation of non-condom related risk reduction strategies was relatively uncommon across the whole sample. However, there were those who drew on their lay understanding of HIV transmission probabilities associated with different sexual acts to rationalise that they were unlikely to have infected another person on occasions where they did have condomless anal intercourse. Nearly all men understood that the range of non-condom related strategies discussed thus far *could* reduce the likelihood of transmission and, in a few cases, this allowed men to make sense of risks that they had *already* taken. For example, a few men who felt uncomfortable about condomless anal intercourse they had in the past said it was unlikely they had transmitted HIV because

they were receptive or withdrew before ejaculation. A few participants drew upon their recent awareness of the 'Swiss statement' to make sense of risks they believed they had taken in the past, and which they regretted.

"I would be worried and care and be concerned for them but, as I say I would try to avoid a situation where I was fucking someone [without a condom]. But that wasn't always the case in the past. And either I have felt guilty about it or I've justified it by saying, 'I have an undetectable viral load and I didn't think I was likely to be transmissible.'" [Late 40s, diagnosed 18 years]

Others took comfort that in the event of condom failure with a discordant partner, then their sexual position, the act of external ejaculation, or their viral load might serve as a 'back-up' to ensure transmission did not occur. This did not constitute intentional use of risk reduction strategies, but rather served to cognitively soften or settle perpetual concerns all men held about the possibility of transmitting HIV to others.

Discussion

This paper presents findings from a qualitative study of gay men with diagnosed HIV who self-identify as having engaged in anal intercourse without condoms in the recent past. The experiences and perspectives of this sample may not reflect the entire population of gay men with diagnosed HIV, but the findings provide a valuable opportunity to examine the range of risk reduction strategies available, and how these might be communicated to, or adopted by, the target population.

The men in this study appeared to hold absolute faith in the effectiveness of condoms and, by comparison, all other risk reduction strategies were viewed with suspicion or caution. As individuals committed to preventing HIV transmission, most found it difficult to entertain the idea that they could

utilise other strategies to reduce transmission risk while accepting HIV exposure might occur. Active planning to reduce the risk of HIV transmission during condomless anal intercourse with sero-discordant partners was only evident among men in longer-term or romantic relationships where, it was stressed that both parties had made an informed choice. While a large proportion of men who reported condomless anal intercourse said they did so with a partner who also had HIV, closer analysis revealed that, in many instances, HIV sero-concordancy was far from certain due to concerns relating to the consequences of explicit disclosure. Such findings resonate with those of Flowers & Davis (2013) who highlight the complex, mindful ways in which HIV status disclosure occurs and remind us that an action commonly conceived within the literature as a 'health behaviour' is actually, at its core, a social, relational and emotional one.

While the notion of 'treatment as prevention' made intuitive sense to many, nearly all expressed discomfort with the idea of relying on their undetectable viral load to ensure transmission of HIV did not occur. Many were sceptical about the scientific basis for these claims and most still held the belief that 'HIV is HIV' (Davis et al., 2002) – and therefore still infectious – regardless of their viral load. The interviews were conducted relatively soon after the initial Swiss Statement, when broad scientific consensus on the notion of viral load and infectivity had not yet been established. However, these data still suggest that many gay men may be uncomfortable with a strategy that only allows them to reduce rather than eliminate the likelihood of infecting someone else. As a clinical intervention with caveats relating to treatment adherence and an absence of other infection, any message that relates to infectiousness and viral load will likely emphasise contingency. This stands in contrast to condoms, which were incorrectly perceived to be a fool-proof method of avoiding exposure and transmission. Commonly held perspectives on use of condoms for anal intercourse being the 'right' thing to do suggest that gay men with diagnosed HIV may face community condemnation if they have condomless anal intercourse but rationalise their behaviour on the basis of their viral load, strategic positioning and/or withdrawal. Both individual and community perceptions of treatment as prevention will likely

shift over time as our understanding of viral load and infectiousness become crystallised and as policy and education promotes early initiation of treatment for transmission preventative purposes. While most men in this study were uncomfortable with the notion of managing risk by consideration of their viral load, this may change (or indeed *have* changed).

While men did not often *plan* to use strategies of risk reduction (except condoms), their understanding of how being the receptive partner or withdrawing prior to ejaculation during insertive anal intercourse without condoms, or the association between their viral load and infectiousness, was operationalised to help them make sense of risks that they had already taken (and thus convince themselves that transmission had not occurred). A consideration of their viral load could also serve to lessen anxieties in situations where condom failure occurred.

A number of researchers have previously explored how viral load factors in gay men's thinking and behaviour regarding HIV transmission, but these are typically studies of association. For example, research in North America (Brennan et al., 2010) found that those who felt that a lower or undetectable viral load or that being on treatment reduces HIV transmission were significantly more likely to report condomless anal intercourse with a partner of serodiscordant or unknown HIV status. A study of HIV positive men in receipt of anti-retroviral therapy (Kalichman et al., 2010) reported an association between the belief that an undetectable viral load reduces the chance of HIV transmission and both a greater number of (sero-discordant) sexual partners and condomless sex. What the current study contributes is a greater understanding of the subtle nuances of how risk reduction is managed, how it is highly contextual, how the stories told about sexual practice depends on when and with whom men are speaking, and how perceptions of risk reduction are influenced by perceived social norms and shared notions of morality.

Whether or not men have established these narratives of preferred risk elimination to portray a positive image of themselves in the interview is unclear, but regardless of the extent to which their words represent an objective 'reality', their construction of risk management (as opposed to risk elimination) as psychologically and socially problematic is important for the development of HIV prevention interventions. This perception (or presentation) of calculated risk-taking as being unacceptable may influence the extent to which some gay men are willing to engage with interventions that seek to reduce – but not eliminate - the risk of transmission by the use of medical technologies. The challenge, therefore, remains for those who provide services for gay men with HIV to provide an environment in which men can critically appraise their desires and their actions, and evaluate their sexual behaviour and reasons why risk-taking occurs.

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Competing interests

The Authors declare that there is no conflict of interest

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